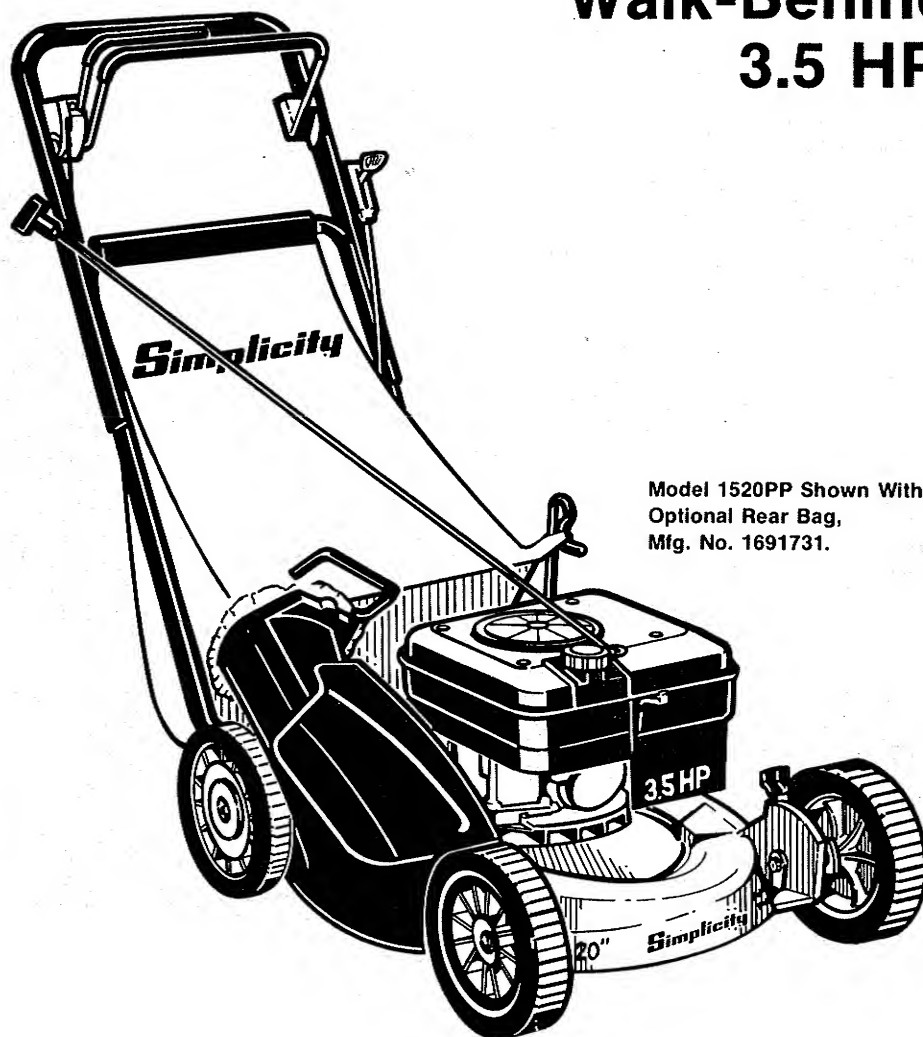


OPERATOR'S MANUAL

Walk-Behind Mowers

3.5 HP, 20" Cut



Model 1520PP Shown With
Optional Rear Bag,
Mfg. No. 1691731.

FORM - 1612436-02
PRINTED IN U.S.A.
11/89

MODEL 1510PS
MFG. NO. 1691725

MODEL 1520PP
MFG. NO. 1691726

Simplicity®

BASIC SAFETY PRECAUTIONS

TRAINING

- Read the operating and service instruction manual carefully. Be thoroughly familiar with the controls and the proper use of the equipment.
- Never allow children to operate a power mower.
- Keep the area of operation clear of all persons, particularly small children, and pets.

PREPARATION

- Thoroughly inspect the area where the equipment is to be used and remove all stones, sticks, wires, bones, and other foreign objects.
- Do not operate the equipment when barefoot or wearing open sandals. Always wear substantial footwear.
- Check the fuel before starting the engine. Do not fill the gasoline tank indoors, when the engine is running, or until the engine has been allowed to cool for several minutes after running. Clean off any spilled gasoline before starting the engine.
- Disengage the self-propelled mechanism or drive clutch on units so equipped before starting the engine (motor).
- Never attempt to make a wheel height adjustment while the engine (motor) is running.
- Mow only in daylight or in good artificial light.
- Never operate the equipment in wet grass. Always be sure of your footing; keep a firm hold on the handle and walk; never run.

OPERATION

- Do not change the engine governor settings or over-speed the engine.
- Do not put hands or feet near or under rotating parts. Keep clear of the discharge opening at all times.
- Stop the blade (s) when crossing gravel drives, walks, or roads.
- After striking a foreign object, stop the engine (motor), remove the wire from the spark plug, thoroughly inspect the mower for any damage, and repair the damage before restarting and operating the mower.
- If the equipment should start to vibrate abnormally, stop the engine (motor) and check immediately for the cause. Vibration is generally a warning of trouble.

- Stop the engine (motor) whenever you leave the equipment, before cleaning the mower housing, and when making any repairs or inspections.
- When cleaning, repairing, or inspecting, make certain the blade and all moving parts have stopped. Disconnect the spark plug wire, and keep the wire away from the plug to prevent accidental starting.
- Do not run the engine indoors.
- Shut the engine (motor) off and wait until the blade comes to a complete stop before removing the grass catcher or unclogging chute.
- Mow across the face of slopes; never up and down. Exercise extreme caution when changing direction on slopes. Do not mow excessively steep slopes.
- Always disconnect electric mowers (line operated) before cleaning, repairing, or adjusting.
- Never operate the mower without proper guards, plates, or other safety protective devices in place.
- Keep washout ports and other mower-housing service openings closed when mowing.

MAINTENANCE AND STORAGE

- Check the blade and the engine mounting bolts at frequent intervals for proper tightness.
- The cutting edges of the mower blade are sharp and can lacerate (cut) skin tissue. Care should be taken when doing any repair work on or around the mower blade. To prevent injury, it is recommended that gloves be worn or the cutting edge be wrapped with newspaper or any other suitable material when working on the blade.
- Keep all nuts, bolts and screws tight to be sure the equipment is in safe working condition.
- Never store the equipment with gasoline in the tank inside a building where fumes may reach an open flame or spark. Allow the engine to cool before storing in any enclosures.
- To reduce fire hazard, keep the engine free of grass, leaves, or excessive grease.
- Check the bag frequently for deterioration and wear and replace worn bags. Check that replacement bags comply with original manufacturer's recommendations or specifications.

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INFORMATION FOR THE PURCHASER

MOWER OPERATOR'S MANUAL

Please read this manual thoroughly before proceeding with assembly. To avoid possible damage, such as crimping the control cables, it is necessary to unpack and assemble the unit per our instructions.

While unpacking the mower, inspect for shipping damage. If you find any damage, notify the store or dealer who sold you the mower.

This operator's manual gives instructions for unpacking and initial assembly, operation and care of the mower. Detailed instructions for maintenance and adjustment are limited to things a user may be expected to perform. For services which, if inexpertly performed, might lead to unit damage or unsafe performance, we recommend an authorized servicing dealer. He has the experience and the genuine factory service parts to do the work.

Descriptions and illustrations are as accurate as possible at the time of publication. Illustrations may include optional equipment or accessories and may not show all models covered by this literature.

SEPARATE ENGINE MANUAL SUPPLIED

In addition to the mower operator's manual you are now reading, an operating and maintenance manual is supplied for the 4-cycle engine. The engine manual covers engine safety, starting, maintenance and adjustment.

WARRANTY INFORMATION

The limited warranty packed with your mower will give the length of time, and conditions under which your machine is warranted.

A serial number plate is located on the mower deck. Record these identification numbers and use them in any correspondence or phone contacts you may have with your authorized servicing dealer or our Manager of Customer Relations.

SAFETY DEFINITIONS



DANGER

The signal word "DANGER" signifies that a source of extreme danger to a person on or near a machine exists as a result of the very nature of the machine itself. This danger to persons is such that it would result in a high likelihood of death or permanent injury if the recommended precautions are not taken.



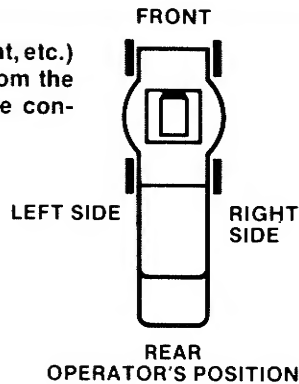
WARNING

The signal word "WARNING" indicates that a source of danger to a person on or near a machine exists which may result in death or injury if the recommended precautions are not taken.

SET-UP INSTRUCTIONS

NOTE

Directions (front, rear, left, right, etc.) in this manual are oriented from the operator's position behind the control handle.



UNPACKING

To prevent pulling and kinking of the control cables, be sure to unpack as instructed below, and do not try to lift the mower out of the carton.

1. Place the carton on a large clear work space.
2. Slit all four corners and lay the sides flat on the work space.
3. Remove protective packing and the bag of small parts.
4. Lay aside the lower control handle. Lay the upper handle straight back from the machine so the cables are not bent.
5. Fasten mower discharge cover to deck with washer and wing nut from bag of small parts.

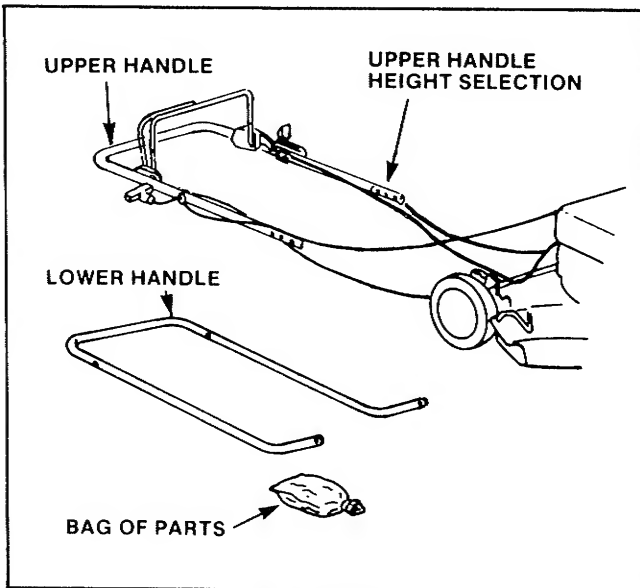


FIGURE 1

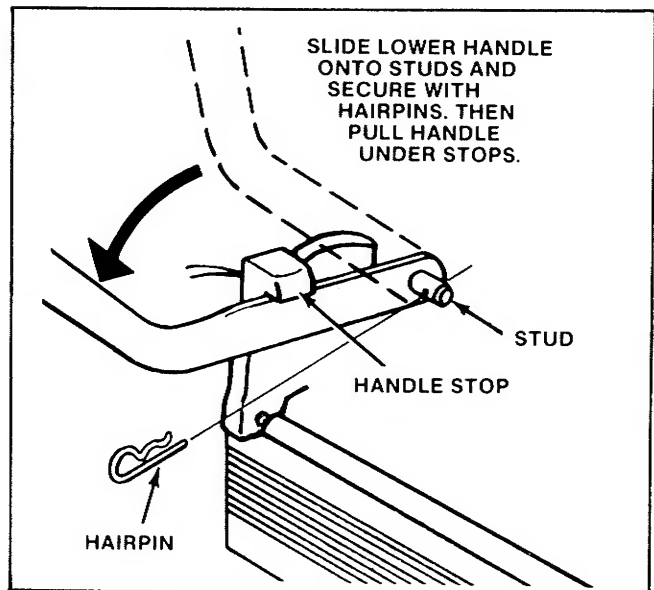


FIGURE 3

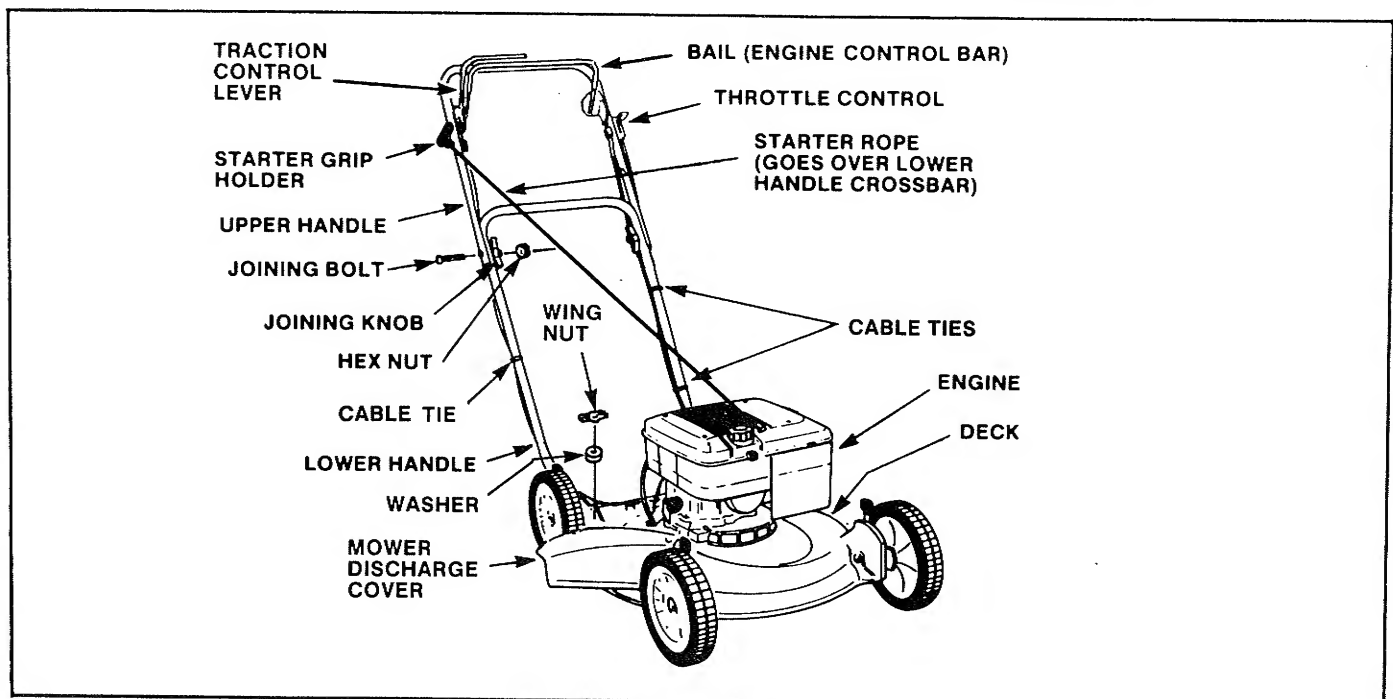


FIGURE 2

ASSEMBLING HANDLES TO DECK (Figures 1 - 3)

Read Steps 1 through 5 and study the details of the first three figures so you will know exactly what to do beforehand.

1. Lay the upper handle straight back from the mower so as not to pull or crimp the control cables. Lay the cables between the sides of the handles so they will go *under* the crossbar of the lower handle when the handles are put together. (See Figure 1.)
2. When installing the lower handle by sliding it onto the mounting studs on the mower deck, place starting rope outside (to the right of) the handle. Use hairpin type retainers from bag of parts to secure handle to mounting studs.
3. Pull lower handle back until it snaps into place under the handle stops. (See Figure 3.)
4. From the parts bag, select two of each of the following for joining of the upper handle and lower handle: joining bolt, wing-nut shaped joining knob, and hex nut. When joining together the handles, do the following:
 - a) If the starter rope interferes with assembly, depress the bail (the engine control bar) at top of upper handle and you will be able to pull out more rope from starter.
 - b) If the optional rear bagger is to be used, the joining knobs go outside the handles, otherwise they should go to the inside.
 - c) Select the desired upper handle height (see Fig. 1) and push a joining bolt through holes on left side of handles, (see Figure 2). Before installing a bolt on the right side, slide starter rope up so that it is above the crossbar of lower handle.
 - d) Put a joining knob and hex nut on each bolt. Tighten these simultaneously to lock handles in position.

5. Attach cable ties (from parts bag) to the lower handle on the straight portions of tubing above the bend of the handle. (See Figure 2.)

ENGINE OIL

The mower was shipped "dry" and must be filled with oil to the level of the FULL mark on the dipstick attached to the crankcase oil filler plug. For engine oil recommendations, lubrication, type of fuel and other points of engine care, follow instructions in your engine manual.

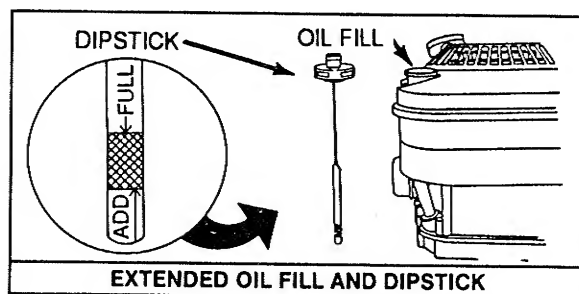


FIGURE 4

OPERATING CONTROLS

BAIL (ENGINE CONTROL BAR) (See Figure 5)

The *bail* is the long bar between the handle uprights. Holding the *bail* against the upper handle indexes the engine control to permit rotation of the engine crankshaft. In accordance with current regulations of the Consumer Products Safety Commission, this control is designed to stop the engine within three seconds after release of the bail by the operator.



WARNING

Should the engine fail to stop within 3 seconds when the bail is released, do not use the mower until the faulty control or braking mechanism has been properly serviced by an authorized servicing dealer.

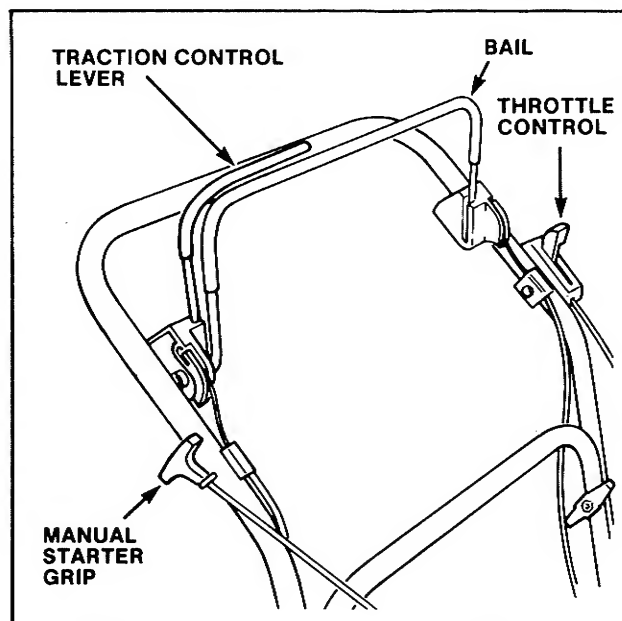


FIGURE 5

THROTTLE CONTROL (See Figure 6)

This control on the left side of the upper handle is connected to the carburetor throttle lever. Its function is to adjust the engine speed from IDLE to RUN to CHOKE. This control has nothing to do with stopping the engine. Pushing the control lever forward increases engine speed. For maximum performance always mow with the throttle lever in the RUN position. Should adjustment fail to cover the full operating speed range, see the "Maintenance and Adjustment" section.

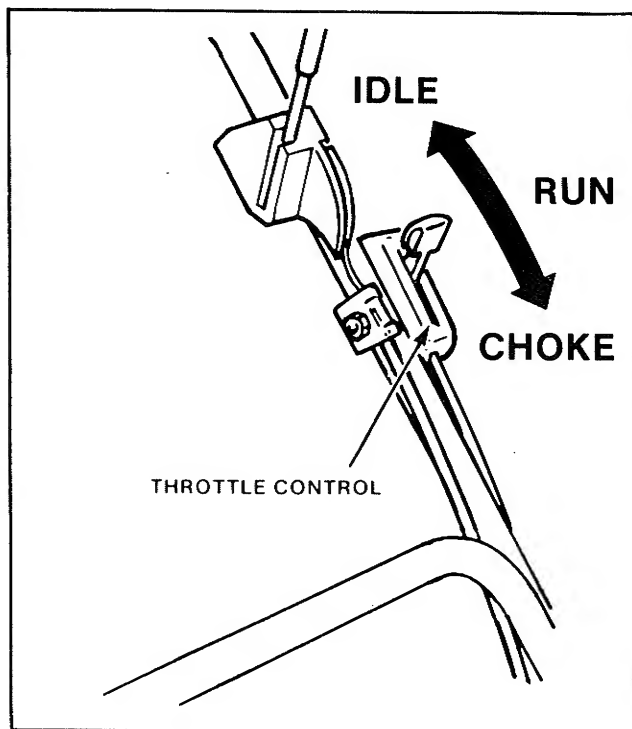


FIGURE 6

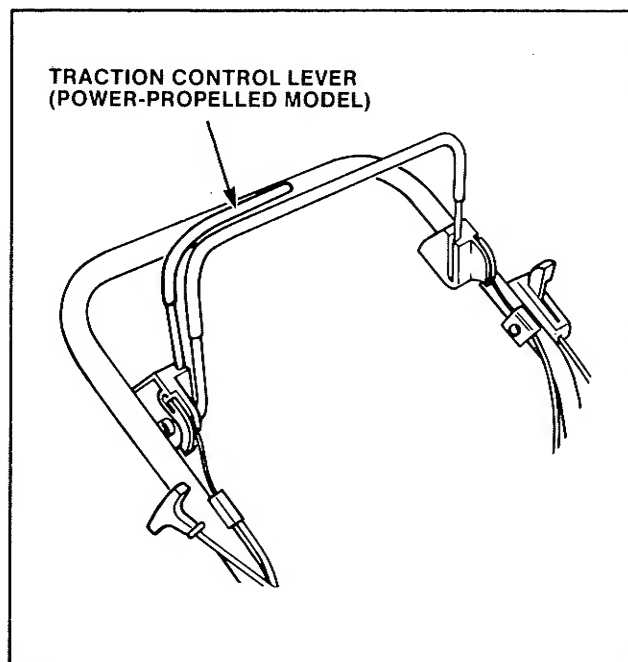


FIGURE 7

NOTE

Parts wear and cable stretch may change performance so that the clutch will slip more than when new. Slipping will first be noticed when mowing on hills or in tall grass. Adjustment to restore the proper amount of slippage can be made by an authorized servicing dealer or by the owner. (See "Maintenance and Adjustment" section.)

WARNING

For safe operation, the traction drive must disengage immediately when the traction control lever is released. If it does not, have the machine properly serviced.

TRACTION DRIVE (See Figure 7)

1. On power-propelled models, the operator has the option of pushing the mower or engaging the traction drive for forward propulsion. The drive is engaged by holding the *traction control lever* at the right end of the bail against the upper handle. When operation without rear wheel propulsion is desired, only the bail should be depressed.
2. The traction drive of the new mower should be checked by the owner. If it does not properly engage and disengage during the following procedure, it should be repaired.
 - a) With engine not running and traction control lever not held down, pull mower backward to see that the rear wheels turn.
 - b) With engine not running, hold traction control lever against handle and pull mower backwards to determine that the rear wheels have been engaged and will not turn.

STARTING AND STOPPING THE ENGINE

PRE-STARTING CHECK LIST

1. Are handles tightened securely?
2. Is underside of mower clean and free from obstructions?
3. Is the blade in good condition? (See "Maintenance and Adjustment" for examination and sharpening.)

IMPORTANT

If the mower has been tilted enough for crankcase oil to flow into the cylinder, **DO NOT TRY TO START ENGINE** until mower has been in the normal upright position for the 3 to 5 minutes required for the oil to drain back into the crankcase. If the starter can not be pulled with ease after this time, there may still be oil trapped in the cylinder. To

clear the cylinder: remove spark plug, crank engine several times, then reinstall the spark plug after wiping it dry.

4. Is cutting height adjusted to your liking? (See "Cutting Height" section.)
5. Is the oil at proper level in the crankcase? Check the dipstick. (See engine manual.)
6. If using a grass catcher, is it properly assembled on the mower?
7. Does the fuel tank contain fresh fuel? (Always use fresh regular grade automobile gasoline. Fill tank completely. **DO NOT MIX OIL WITH THE GASOLINE.**)
8. Open fuel shut-off valve.

STEPS FOR STARTING AND STOPPING ENGINE (See Figure 8)



DANGER

Blade rotates when engine is running. Contact with the mower blade will cause serious bodily injury. This mower has been designed with safety features which permit starting the mower only from the operator's position behind the handles. Do not defeat or disconnect the engine control bar, or try to operate the engine from anywhere except the operator's position.

1. Put the mower on clear level ground or already mown grass (not uncut grass). Open fuel valve.
2. Move the throttle control lever to the "CHOKE" position.
3. Grasp and lift starter grip. Depress and hold the *bail* against upper handle. (See Figure 8.) The bail is part of the safety and engine stopping system. The engine cannot be started if the bail is not depressed. The engine will stop running when the bail is released.
4. Pull the starter grip slowly until starter engages. Then pull cord rapidly to overcome compression, prevent kickback and start engine. Repeat if necessary with throttle in the "RUN" position until engine starts.
5. Allow the engine to warm up.



TO CRANK ENGINE, HOLD BAIL DEPRESSED. LIFT GRIP FROM HOLDER. PULL GRIP SMOOTHLY. HOLD GRIP DURING REWINDING.

FIGURE 8

OPERATING INSTRUCTIONS

WARNING

For safe operation, the traction drive on power-propelled models must disengage immediately when traction control lever is released. If it does not, check for binding in lever or cable, replace or lubricate parts as required for proper disengagement.

OVERLAPPING THE RUNS

Overlap each run for maximum width with a minimum of wheel tracks. Run the inside of the front wheel along edge of uncut grass.

DANGER

The least dangerous method for mowing on hills and terraces is to cut horizontally along the slope (as in Figure 9) instead of up and down (as in Figure 10). This will place you away from the mower if you slip. It will also reduce scalping on crowns of hills. Exercise extreme caution to avoid slipping and contacting the rotating blade while mowing on hills. Because of the increased danger of slipping (even on level surfaces) never mow when grass is wet or damp. Always wear adequate footwear.

On hillside mowing, when possible, keep air cleaner and carburetor on the uphill side (see Figure 9). Make sure that the crankcase is properly filled with oil. (See Figure 4.)

Cut only when grass is dry to obtain the best appearance. Wet grass may clog mower.

When cutting high or heavy grass, cut grass twice, once at a high wheel setting, and then at the desired height. This will insure a smooth, finish cut. If clogging occurs, reduce width of cut and/or raise height of cut, or slow your pace. Cut only 1/3 of the grass blade height in a single cutting to a maximum of about 2" (50 mm). This greatly reduces the possibility of clumping or clogging in the mowing chamber as well as preventing undue shock to the grass and helps to maintain a normal growth cycle.

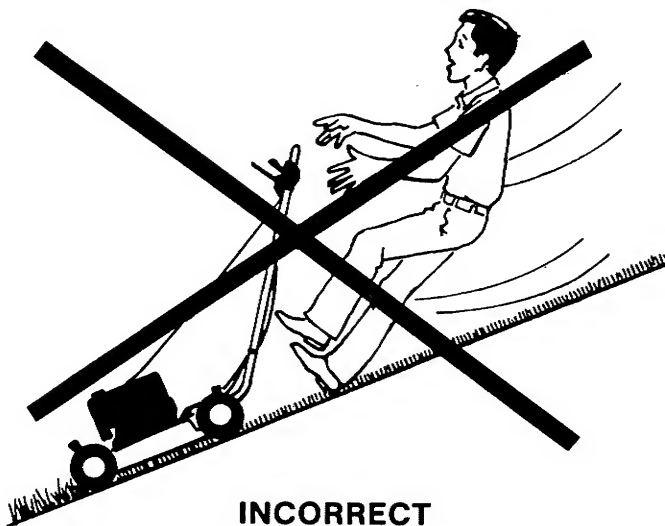
If chute clogs, release the bail. When the engine stops, disconnect the spark plug wire. NEVER, NEVER IN ANY MANNER, TRY TO UNCLOG MOWER WITH ENGINE RUNNING. Raise chute and clean out debris. Be careful not to cut fingers on the blade which may be directly below the chute opening. Reconnect spark plug wire after mower is cleared.

WHEN POSSIBLE, KEEP
AIR CLEANER AND CARBURETOR
ON UPHILL SIDE.



CORRECT
CUT ALONG THE SIDE
OF HILL (HORIZONTALLY)

FIGURE 9

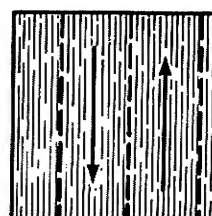
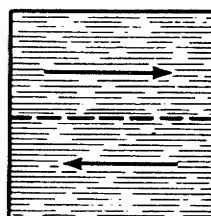
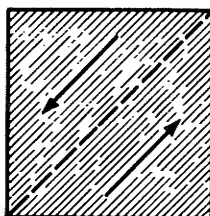
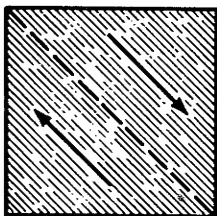


INCORRECT
DO NOT CUT UP AND DOWN
HILLS — DANGER OF SLIPPING
AND CONTACTING ROTATING BLADE.

FIGURE 10

MOWING PATTERNS

If the mowing pattern and direction of progress are changed each time, every cutting will help to eliminate matting, graining and corrugation, thereby enhancing the appearance of your lawn. Instead of cutting in circles, try the various mowing patterns shown.



MAINTENANCE AND ADJUSTMENT

! WARNING

To avoid the possibility of serious bodily injury, when performing any maintenance other than carburetor adjustment on engine, disconnect and move spark plug wire away from plug to prevent accidental starting. (See Figure 11.)

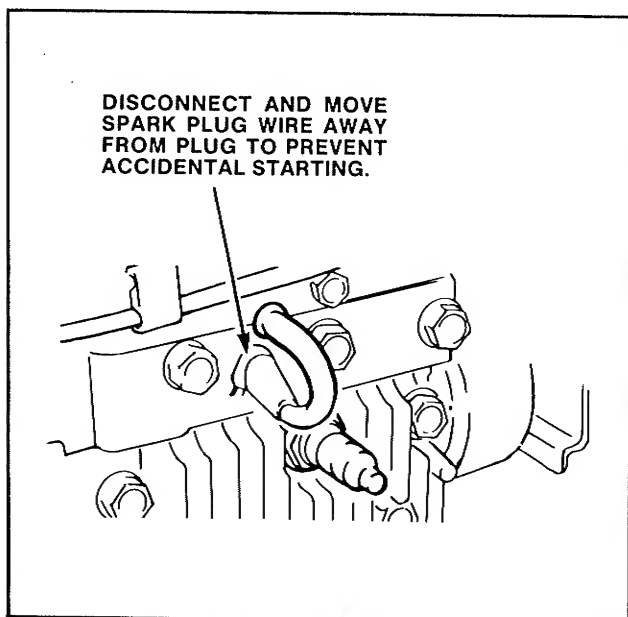


FIGURE 11

CUTTING HEIGHT

All four wheels were set at the factory to a 1 1/2" (38 mm) cutting height. Until you have determined the right cutting height for your lawn, we recommend your setting the height at 2 1/2" (64 mm). The mower has height settings in 1/2" (13 mm) increments from 1 1/2" (38 mm) to 3 1/2" (90 mm). Put all four wheels in the same position for even cutting. Do not place fingers under deck when making cutting height settings. Never adjust mower height with the engine running.

! WARNING

To avoid the possibility of serious bodily injury, disconnect and move the spark plug wire away from plug before performing any work on the blade or underside of deck. If working on underside of deck, empty the fuel into a suitable fuel container. Wear gloves to protect against sharp blade and edges of deck.

WASHING

We recommend that the underside of the deck be washed whenever material collects there. In very lush conditions, this may have to be done frequently.

IMPORTANT

After tipping mower up for inspection or any other reason **DO NOT ATTEMPT TO START ENGINE** until mower is allowed to set in normal upright position for at least 3 to 5 minutes. It is important to give oil enough time to drain back into crankcase. If, after 5 minutes, starter cord still does not pull easily, remove the spark plug, slowly crank engine to expel any oil still trapped in cylinder, and reinstall spark plug. Engine may now be started.

AFTER WASHING, RUN THE ENGINE FOR A FEW MINUTES TO EVAPORATE THE WATER.

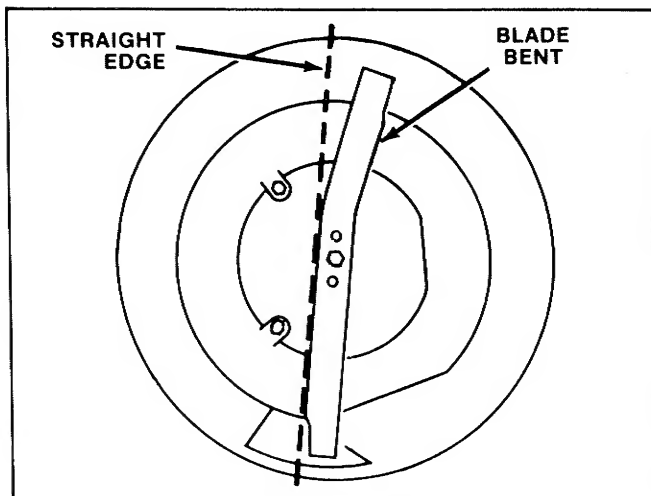


FIGURE 12

EXAMINING THE BLADE

Before each use, examine the blade to make sure it is in good operating condition. Lay the machine on its right side and check as follows:

1. The blade should follow along a straight line (as shown in Figure 12).
2. Striking a hard object such as curbing can bend the blade. If the impact was enough to bend the blade it may also have caused microscopic cracks in the tempered steel. Immediate replacement of a bent blade, accordingly, is recommended, because cracked portions of the blade can become dangerous projectiles if they break off.

NOTE

Be careful in handling the blade. Wear gloves.

3. Examine the blade at the area of the upturned air vanes for the type of wear displayed in Figure 13. Abrasives encountered by the blade can wear metal until it cracks as shown in "A" of Figure 13. Because such cracks, enlarging as in "B," can result in the pieces breaking off to become potentially injurious projectiles, blades should be replaced at the first sign of a crack.

IMPORTANT

After tipping up the mower for inspection, service, or cleaning underside of deck, do not start engine until mower has been in upright position for at least 3 to 5 minutes, and the oil has seeped back into the crankcase.

CHANGING BLADE (See Figure 14)

1. Move mower onto a driveway or concrete floor, raise discharge chute and tip mower on its right side.
2. Put the shank of a screwdriver in the deck drain hole (see Figure 14) to block the blade from turning.
3. Using a 9/16" wrench, turn the blade mounting bolt slowly counterclockwise to bring the blade against the screwdriver. Then remove the bolt, lockwasher, and blade.
4. To reassemble blade, reverse the above procedure. Use a torque wrench and tighten bolt to 35-40 ft. lbs. (47-54 Nm).

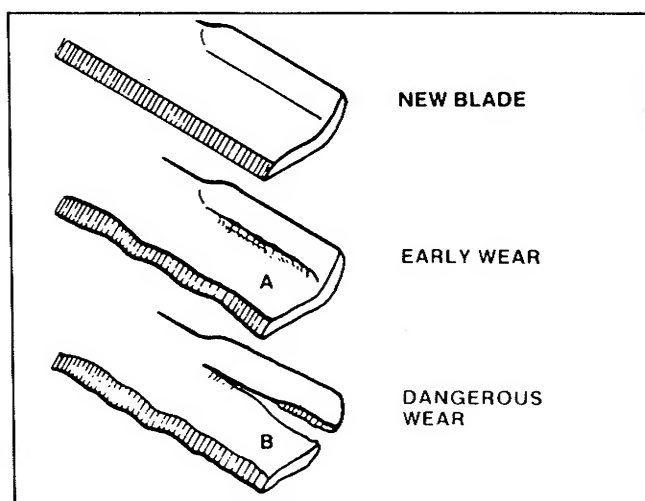


FIGURE 13

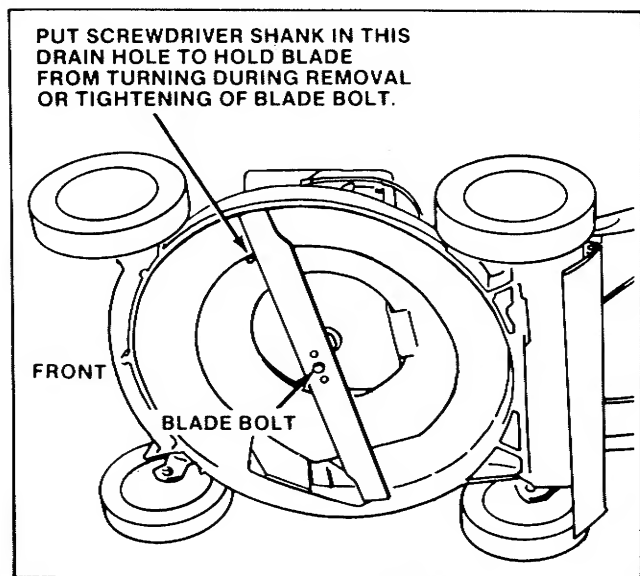


FIGURE 14

SHARPENING BLADE

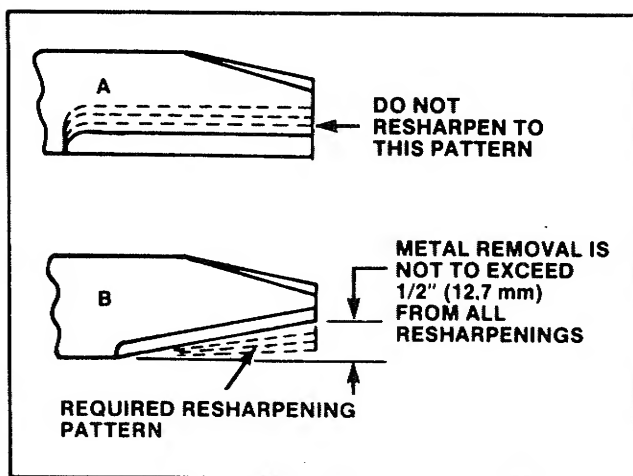


FIGURE 15

NOTE

When dressing or resharpening the blade, DO NOT follow the original angle of grind as shown in "A," Figure 15. Instead, grind new cutting edges on a diagonal as shown in "B." Some metal will be lost each time. The total loss, measured at tip of blade as in "B" of Figure 15 should not exceed 1/2". Make sure that each cutting edge receives an equal amount of grinding to prevent having an unbalanced blade which will vibrate excessively at high speeds and may damage the mower.



DANGER

Incorrect resharpening of the blade beyond the amount displayed in "B" of Figure 15 increases the possibility that a sudden impact could break the tip off the blade. A broken piece discharged from under the mower at high speed could cause serious bodily injury.

BLADE BALANCING

Check balance of blade by supporting blade at center hole with a nail or round screwdriver clamped in a vise. If either end of the blade rotates downward, grind or file material from end - not the leading edge of the blade. The blade is properly balanced when neither end drops.

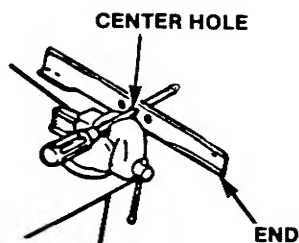


FIGURE 16

CHANGING GROUND SPEED

The power-propelled models are equipped with two pulleys on the engine crankshaft allowing a fast (2.7 mph) and a slow (2.4 mph) ground speed. The large pulley is for "fast speed" and the small pulley for "slow speed." To change ground speed:

1. Disconnect the spark plug wire from the spark plug.
2. Remove the bolt holding the belt cover to the mounting strap on the mower deck. Then slide out the cover.
3. Slip the belt over and off the gear reducer pulley.
4. Look into the slot in the mower deck and install the belt in the desired pulley groove. Large pulley for "fast speed" and small pulley for "slow speed."
5. Rotate the gear reducer against the spring force by pushing down on the lever.

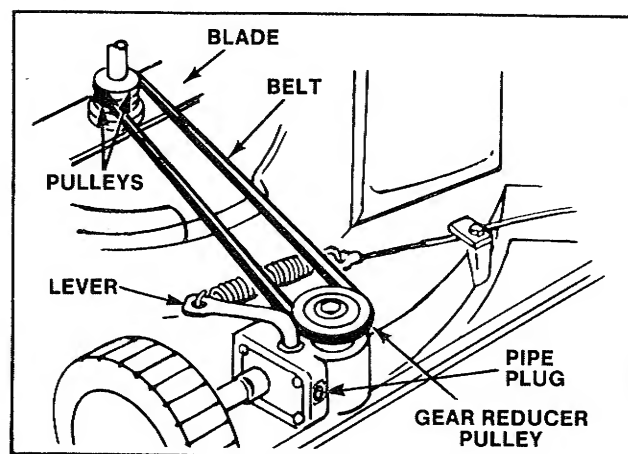


FIGURE 17

6. Install the belt on the gear reducer pulley and release the gear reducer. Check to be sure the belt is seated in the desired pulley groove on the engine and properly seated in the gear reducer pulley.
7. Install the belt cover and secure with the bolt.

BELT REPLACEMENT

Replacement belts are available from your authorized servicing dealer. Follow the procedure given below.

1. Disconnect spark plug wire from the spark plug.
2. Remove the bolt holding the belt cover to mounting strap on deck. Then slide out the cover.
3. Slip the belt over and off the gear reducer pulley.
4. Tip the mower on its right side letting it rest on its handles.

CAUTION

Do this procedure with less than 1/4 of gasoline and the oil dipstick must be tight.

5. Pull the belt through slot in deck so that entire belt is under deck.
6. Slip belt over end of blade and remove.
7. Reverse the above procedure to install new belt.

FAILURE OF POWER-PROPELLED MODELS TO DE-CLUTCH

If the mower creeps (or the transmission remains engaged) when the traction control lever is released, check the control cable for dirt or frayed wires which could hinder smooth travel through the cable conduit. Clean the cable. If trouble persists, see your authorized servicing dealer for repair before further use of the mower.

TRACTION DRIVE ADJUSTMENT

Parts wear or stretching of the traction control cable eventually may cause excessive slipping which first becomes apparent during maximum loading situations such as uphill mowing.

The following steps may be taken to achieve the proper adjustment:

1. Disconnect the spark plug wire.
2. Unscrew cable clamp from the mower deck.
3. Lift cable from the slot in the mower deck and move it to the right until the slack is removed from the cable.
4. Put cable in slot and install cable clamp.
5. Tighten cable clamp screw.
6. Install spark plug wire on spark plug.
7. Test drive adjustment. If mower drive does not release readjust adding slack to the system.

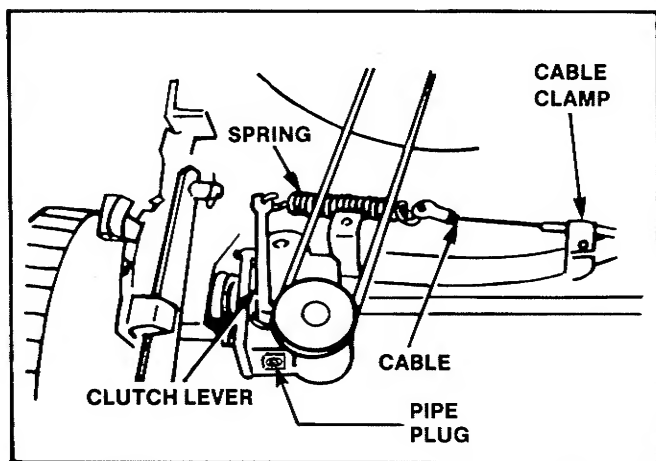


FIGURE 18

THROTTLE CONTROL ADJUSTMENT

(See Engine Manual.)

NOTE

If the engine cannot reach maximum governed speed, suspect a need for readjustment of the carburetor to provide the correct fuel/air mixture. Maximum speed is controlled by the engine governor which should be serviced only by an authorized servicing dealer. Carburetor adjustments and throttle linkage adjustments should never allow the engine to exceed the maximum governed speed.

COOLING SYSTEM

Grass, chaff or dirt may clog the rotating screen and the air cooling system, especially after prolonged cutting of dry grasses. To avoid overspeeding, overheating and engine damage, remove the blower housing and clean out dirt and debris as instructed in your engine manual. This should be a regular maintenance operation.

CARBURETOR ADJUSTMENT



WARNING

Carburetor adjustment requires high speed operation of the engine during the process. It is, accordingly, required that a mature person, well-acquainted with the dangers of improper procedure, assist by controlling the engine from the operator's position while the adjustments are being made. **DO NOT PUT FINGERS OR TOES NEAR THE MOWER DECK DURING THIS ADJUSTMENT.**

Minor carburetor adjustment may be required to compensate for differences in fuel, temperature, altitude and load. All carburetor adjustments must be made with the air cleaner in place on the carburetor. The engine will not run with the air cleaner mounting screw removed. Best adjustment is made with fuel tank half full of gasoline. See your engine manual for instructions for carburetor adjustment.

AIR CLEANER

Clean the air cleaner every 25 hours under normal conditions and every few hours under extremely dusty conditions. Poor engine performance and flooding usually indicate need to service the air cleaner. Follow cleaning instructions in your engine manual.

ENGINE OIL

Read engine manual supplied with mower.

LUBRICATION



WARNING

To avoid the possibility of serious bodily injury, when performing any lubrication, disconnect and move spark plug away from plug to prevent accidental starting.

WHEELS ON PUSH MODELS — FRONT WHEELS ONLY ON POWER-PROPELLED MODELS

Lubricate wheels and the support shafts once a month or every 40 operating hours with SAE 30 oil. Tip mower on its side and apply oil to axle and hub. Spin wheel to allow oil to move into bearing. Oil the wheel support shafts at point where they enter deck. Move indexing levers of height adjusters back and forth to allow oil to move into bearing surfaces.

In extremely dusty conditions, wheels may become tight because of dust in bearing area. When this condition occurs, remove the wheels. Clean axle and wheel bearing surfaces with solvent or emery cloth, then oil and reassemble. Torque to 190-285 in. lbs. (21 to 32 Nm).

REAR WHEELS ON POWER-PROPELLED MODELS

At the beginning of each season lubricate the wheels and pinions. Block up mower at rear of deck until the rear wheels are free.

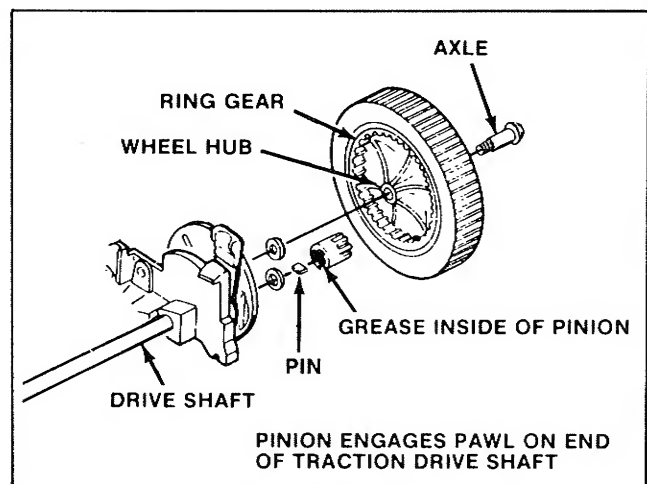


FIGURE 19

Remove the axle screws and pull off the wheels. Apply a liberal amount of grease to pinion, ring gear, wheel hub, and axle (see Figure 19).

Reinstall the wheels, making sure the pinions and gears mesh properly. Be careful to install the pinions on the proper sides, as they are not interchangeable. Propulsion will occur only if the parts are correctly installed (see Figure 20).

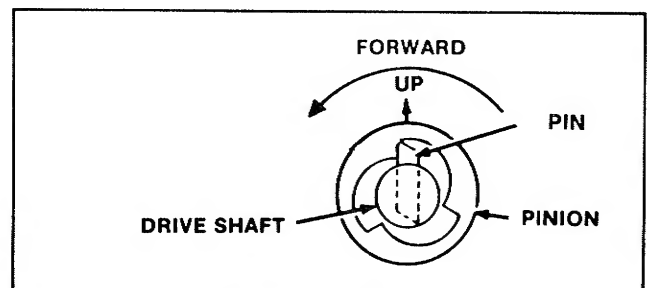


FIGURE 20

REDUCTION GEARBOX OF POWER-PROPELLED MODELS

The reduction gearbox is filled with oil at the factory. Additional oil will not be required under normal use. Every 25 hours, or if leakage is apparent, remove the pipe plug (see figure 18). If oil level is below the hole, fill until oil is level with bottom of hole. Use Type "F" Automatic Transmission Fluid.

Do not substitute lubricant. If repair is necessary, see your authorized servicing dealer.

IMPORTANT:

Overfilling or use of improper lubricant will cause premature gear box failure.

STORAGE



DANGER

To prevent accidental starting and the possibility of serious bodily injury, disconnect the spark plug wire and move it away from the spark plug before transporting the machine or preparing it for storage.



DANGER

To avoid the possibility of serious bodily injury, do not attempt to start the engine or operate controls when handles are folded or removed. If handles are removed do not pull them away from mower as the cables are still assembled to lower unit. Do not pull or lift mower by grasping underedge of deck.

AT THE END OF EACH SEASON

Always clean the underside of the deck at end of season, or if the mower is to be stored for any length of time. If necessary, a soft bristle scrub brush can be used to clean the wheels and tires, and a small stick can be used to clean out corners.

Make sure the fuel tank is empty, as gasoline can escape from the vent hole in the tank cap if the mower is tipped. Disconnect the spark plug wire. Be very careful if you touch the blade ends, as they are quite sharp. Tip the mower rearward and apply a stream of water directly at the underside of the deck until you have thoroughly cleaned it to your satisfaction.

Lubricate the mower as instructed under "Lubrication." Wipe the entire unit with a clean cloth to remove the gasoline stains and oily spots.

The above simple procedures will keep your mower looking new for years to come.

1. Disconnect the spark plug wire and move it away from plug. (See Figure 11.)
2. If on machine, grass bag and adapter must be removed.
3. Press inward on both lower handle ends until they clear the handle stops on deck. Then push handle forward. If more slack is needed at this point, depress bail and pull out starter rope.
4. Loosen the two handle-joining knobs. While bending the upper handle backwards at the joints, make sure to arrange the cables so there are no kinks or sharp bends.

ENGINE STORAGE

1. All fuel should be removed from fuel tank. Run the engine until it stops from lack of fuel. The small amount of fuel that remains in the sump should then be removed by absorbing it with a clean dry cloth. Dispose of fuel-saturated rags properly, in a well ventilated area to avoid possibility of spontaneous combustion.
2. Remove spark plug, pour 2 to 3 tablespoons (30 ml) of SAE-30 oil into cylinder and crank slowly to distribute oil. Replace spark plug.
3. Clean the air cleaner and cooling system as instructed under "Maintenance and Adjustment."

FOLDING HANDLE (See Figure 21)

IMPORTANT

To avoid damage to cables do not fold the upper handle forward.

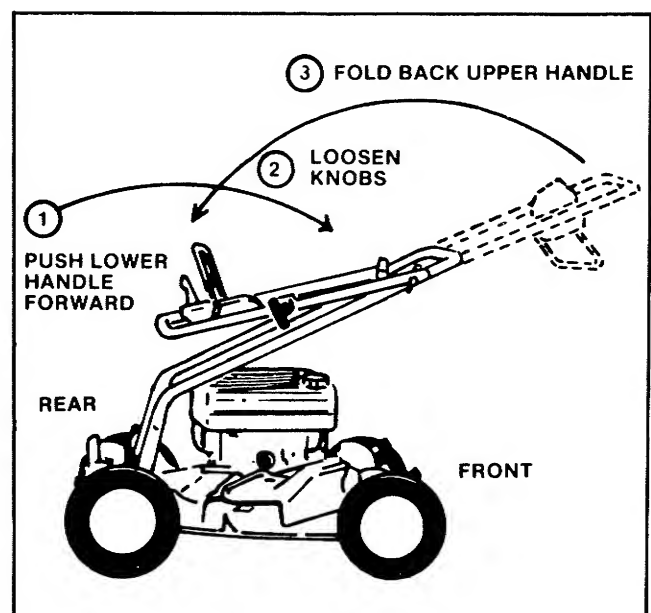


FIGURE 21

TROUBLESHOOTING

PROBLEM	CAUSE	CORRECTION
DOES NOT START	<ol style="list-style-type: none"> 1. Out of fuel. 2. Spark plug wire disconnected from the spark plug. 3. Fouled spark plug. 4. Throttle control not in correct position. 5. Stale fuel. 6. Moisture in fuel. 7. Engine flooded. 8. Grass too high. 	<ol style="list-style-type: none"> 1. Fill fuel tank. (Open fuel shut-off valve.) 2. Connect wire to spark plug. 3. Clean or replace spark plug - set gap to .030 of an inch. 4. See Starting and Stopping, page 7. 5. Drain fuel tank and refill with fresh fuel. 6. Drain fuel tank and refill with fresh fuel. 7. See starting instructions, page 7. 8. Move to low grass or no grass area.
LOSS OF POWER	<ol style="list-style-type: none"> 1. Dirty air cleaner. 2. Moisture or dirt in fuel. 3. Carburetor misadjusted. 4. Build up of grass in the cutting deck. 5. Throttle not in proper operating position. 6. Cutting too much grass. 7. Throttle cable not adjusted. 	<ol style="list-style-type: none"> 1. Clean - follow instructions on page 13. 2. Drain fuel tank and refill with fresh fuel. 3. Adjust carburetor - instructions page 13. 4. Clean. 5. Adjust throttle. 6. Set height adjusters in higher position - see page 9. 7. Adjust- See engine manual.
EXCESSIVE VIBRATION	<ol style="list-style-type: none"> 1. Worn or bent blade. 2. Loose blade. 3. Incorrect sharpening. 4. Excessive grass build up in deck. 	<ol style="list-style-type: none"> 1. Replace blade - see page 10. 2. Tighten blade bolt - see page 10. 3. Balance blade - see page 11. 4. Clean.
EXCESSIVE ENGINE SPEED	<ol style="list-style-type: none"> 1. Grass buildup around rotating screen and air cooling system. 	<ol style="list-style-type: none"> 1. See "Cooling System", page 12.
POOR QUALITY CUT	<ol style="list-style-type: none"> 1. Bent blade. 2. Worn blade. 3. Wheels set at different levels. 4. Engine running too slowly. 5. Build up of grass in the cutting deck. 	<ol style="list-style-type: none"> 1. Replace blade - see page 10. 2. Sharpen - see page 11. 3. Place all wheels at same height. 4. See "Loss of Power." 5. Clean the deck.
TRACTION DRIVE MALFUNCTION	<ol style="list-style-type: none"> 1. Broken or disconnected cable. 2. Slipping or slow engagement. 3. Belt out of pulley groove or broken. 4. Pinion or pins improperly installed. 	<ol style="list-style-type: none"> 1. Have serviced. 2. See page 12. 3. See belt installation, page 11. 4. See page 13.

COMMON REPLACEMENT PARTS

Description	Model 1510	Model 1550pp
	Part No.	
Blade	1612154	1612154
Blade Adaptor	1612356	1612356
Drive Belt		1612157
Front Wheels	1612423	1612423
Rear Wheels	1612423	1612398
Touch-Up Paint (13 oz. Spray Can)	103028	103028
Grass Bag*	1612445	1612445

*Replacement bag if equipped with optional grass catcher.

Simplicity Manufacturing, Inc.
500 N. Spring Street
P.O. Box 997
Port Washington, WI 53074-0997

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